REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

Claims 6 and 31 have been cancelled without prejudice.

Claims 1, 8, 11-15, 21, 37-39, 43 and 50 have been rejected, although the rejections of Claims 6 and 31 under 35 U.S.C. § 112 have been withdrawn. Claims 2-4, 9, 10, 16-20, 22, 23, 32-36, 40-42 and 44-49 have been withdrawn from consideration. Since Claims 2-4, 9, 10, 16-18, 20, 32-36, 40, 41 and 46-49 depend from claims which are believed to be allowable, it is respectfully requested that they be included in any patent issuing from the present application.

Applicants wish to thank Examiner Hodge for the courtesy of an interview on February 7, 2007 at which time the invention and the outstanding rejection were discussed as set forth below. As a result of this discussion, it is Applicant's understanding that the amendments to Claims 11 and 12 found herein overcome the rejection of Claim 11 under 35 U.S.C. § 112, first paragraph. It is also Applicant's understanding that the prior art rejections of Claims 14 and 43 would be overcome if these claims were amended to further recite that the flow rate-reducing portion includes a buffer. This has been done in the present response. No agreement was reached concerning the other prior art rejections.

Claims 1, 8, 13-15 and 50 were rejected under 35 U.S.C. § 103 as being obvious over Boneberg et al in view of WO '993. Boneberg et al is directed to a device used to evaporate or superheat a methanol/water mixture to generate a gaseous fuel to be reformed for use in a fuel cell. The anode and cathode exhaust gases from the fuel cell are mixed in the mixing portion 4 and combusted in the burner 3 to provide heat for the heat exchangers 1 and 5 to evaporate or superheat a hydrocarbon or hydrocarbon/water mixture to be fed to the reformer of the fuel cell system.

As the Office Action has recognized, however, there is no disclosure of a valve in the line (first flow passage) providing hydrogen-off gas to the mixing portion 4. WO '993 was therefore cited to suggest a valve in the hydrogen-off gas flow passage of Boneberg et al to "utilize the supplied hydrogen to its fullest extent without waste." Applicants explained during the aforementioned interview that this purported motivation is inconsistent with the teachings of Boneberg et al since the hydrogen gas reaching the mixing portion 4 via the anode exhaust gas passage of Boneberg et al is not wasted but is used in heating the hydrocarbon fuel in the heat exchanger 1.

In response, it was the position of the Examiner during the interview that it would nonetheless have been obvious to have provided a valve in the hydrogen-off gas flow passage of Boneberg et al to regulate or limit the hydrogen exhaust gas flow to correspond to the oxygen exhaust gas flow or variations in the heat requirements of the heat exchanger. However it is respectfully submitted that this rationale is flawed in at least the following respects:

First, Boneberg et al describes that the cathode exhaust is high in residual oxygen, which suggests against limiting the hydrogen exhaust gas flow.

Second, Boneberg et al is concerned with the problem of maximizing the efficiency of the heating and evaporating the fuel for the reformer. Providing a valve to limit the hydrogen gas flow would retard, and not maximize, the efficiency of such heating

Finally, **Boneberg et al explicitly teaches against the need for such a valve**: "there is no need for any further delivery devices for supplying the [anode and cathode] gases" (col. 3, lines 42-45). Adding a valve for the hydrogen exhaust gas flow would have conflicted with this teaching of Boneberg et al, and so the claims define over this prior art.

Dependent Claim 13 recites a control portion adapted to control the valve, wherein the control portion includes means for opening and closing the valve at intervals of a relatively

short period when delivering the discharged oxygen-off gas to the mixing portion. Dependent Claim 15 recites a control portion adapted to control the valve, wherein the control portion includes means for opening the valve if the concentration of hydrogen in the discharged hydrogen-off gas drops below a reference concentration. The Office Action stated that these claims would have been obvious because the controller of WO '993 "is capable" of performing the claimed functions; there is no allegation of a controller programmed to perform the claimed functions.

The Examiner's attention is respectfully directed to MPEP § 2106:

> Where means plus function language is used to define the characteristics of a machine or manufacture invention, such language must be interpreted to read on only the structures or materials disclosed in the specification and "equivalents thereof" that correspond to the recited function. Two en banc decisions of the Federal Circuit have made clear that the USPTO is to interpret means plus function language according to 35 U.S.C. § 112, sixth paragraph. *In re Donaldson*, 16 F.3d 1189, 1193, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994) (*en banc*); *In re Alappat*, 33 F.3d 1526, 1540, 31 USPQ2d 1545, 1554 (Fed. Cir. 1994) (*en banc*).

As explained in *WMS Gaming, Inc. v. International Game Technology*, 184 F.3d 1339, 51 USPQ2d 1385, 1393-1394 (Fed. Cir. 1999), *In re Alappat* requires that:

> In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, *the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.* [citation omitted] Accordingly, the structure disclosed for the "means for assigning" limitation of claim 1 of the Telnaes patent is a microprocessor programmed to perform the algorithm illustrated in Figure 6. In other words, the disclosed structure is a microprocessor programmed to assign a plurality of single numbers to stop positions such that: 1) the number of single numbers exceeds the number of stop positions; 2) each single number is assigned to only one stop position; 3) each stop position is assigned at least one single number; and 4) at least one stop position is assigned more than one single number. (Emphasis added).

Thus it is not sufficient for the Office Action to state that the controller of WO '993 is [a general purpose computer] "capable of" performing the claimed functions. There must be

evidence that it is [a special purpose computer] "programmed to perform" the claimed functions, i.e., programmed to open and close the valve at intervals of a relatively short period when delivering the discharged oxygen-off gas to the mixing portion, and to open the valve if the concentration of hydrogen in the discharged hydrogen-off gas drops below a reference concentration. No such evidence is present, and so the claims define over this prior art.

Claim 21 recites a diffusion member which is disposed at an end of the exhaust flow passage and which can diffuse a gas flowing out from an opening at the end of the exhaust flow passage in the radial direction of the opening, and a valve disposed in the exhaust flow passage through which the hydrogen off gas is discharged to the atmosphere. Claim 21 had been rejected under 35 U.S.C. § 103 as being obvious over Salvador et al in view of WO '993 Heinen et al. However no obvious combination of Salvador et al and WO '993 discloses a valve disposed in a hydrogen exhaust flow passage from a fuel cell. Salvador et al and WO '993 are directed to fuel cells for vehicles. Heinen et al, on the other hand, simply discloses a diffusion member 13 as part of an air supply tube 8 that is applied to a wall of a housing. It is respectfully submitted that one skilled in the art would not have considered Heinen et al to be analogous prior art and would not have found it obvious to have combined Salvador et al and WO '993 with Heinen et al. Claim 21 is therefore believed to define over any combination of the above references.

Claims 37-39 were rejected under 35 U.S.C. § 103 as being obvious over Boneberg et al in view of WO '993, and further in view of Shabaker which was cited to teach a flow control orifice. However, while flow control orifices, *per se*, were known, there is no teaching in the art to motivate the use of a flow control orifice for the hydrogen gas off line of Boneberg et al. These claims therefore also define over the prior art.

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

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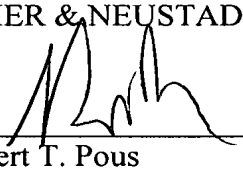

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